# JOURNAL OF CELLULAR AND COMPARATIVE PHYSIOLOGY

Board of Editors

ARTHUR K. PARPART, Managing Editor Princeton University

W. R. AMBERSON University of Maryland

H. F. BLUM National Cancer Institute

D. W. BRONK The Rockefeller Institute

L. B. FLEXNER

M. H. JACOBS University of Pennsylvania University of Pennsylvania

D. MARSLAND New York University

D. MAZIA University of California

VOLUME 56 AUGUST, OCTOBER, DECEMBER AND SUPPLEMENT 1 NOVEMBER

PUBLISHED BY

THE WISTAR INSTITUTE OF ANATOMY AND BIOLOGY PHILADELPHIA, PA.



## CONTENTS

### No. 1 AUGUST 1960

Samuel P. Maroney, Jr. Ultraviolet-Induced Hemolysis of Frog Erythrocytes in the Presence of Various Nonelectrolytes	1
STEPHEN F. PETROPULOS. The Action of an Antimetabolite of Thiamine on Single Myelinated Nerve Fibers	7
ROBERT S. TEAGUE AND JANE R. PATTON. Analysis of the Spectro- photometric Reflectance Response of Frogs to Melanophore Hormone	15
VICTOR G. BRUCE AND COLIN S. PITTENDRIGH. An Effect of Heavy Water on the Phase and Period of the Circadian Rhythm in <i>Euglena</i>	25
Joseph J. Chang. Electrophysiological Studies of a Non-Luminescent Form of the Dinoflagellate <i>Noctiluca miliaris</i>	33
LEIF SKJELKVALE, VIRGINIA K. NIEDER AND ERNST G. HUF. Metabolic Studies on Frog Skin Epithelium	43
Edward Spoerl, H. W. Nields and J. J. Plisich. An X-Ray Induced Block Preventing Cell Degeneration and Accompanying an Inhibition of Cell Division in Yeast	55
No. 2 OCTOBER 1960	
C. P. BIANCHI AND A. M. SHANES. The Effect of the Ionic Milieu on the Emergence of Radiocalcium from Tendon and from Sartorius Musele	67
Paul A. Swenson. Leakage of Phosphate Compounds from Ultraviolet-Irradiated Yeast Cells	77
MARILYN L. ZIMNY AND CURTIS BOURGEOIS. Histochemical Localization of Some Enzymes in the Kidney of a Hibernator	93
ROBERT GILBERT FAUST. Monosaccharide Penetration into Human Red Blood Cells by an Altered Diffusion Mechanism	103

#### CONTENTS

## No. 3 DECEMBER 1960

Julia T. Apter and K. Koketsu. Temperature Studies Implicating Calcium in Regulation of Muscle Membrane Potential	123
YUZO SEKOGUTI. On the ATPase Activities in the Retina and the Rod Outer Segments	129
RUDOLF JANDER AND TALBOT H. WATERMAN. Sensory Discrimination Between Polarized Light and Light Intensity Patterns by Arthropods	137
Ichiro Tanaka and Taeko Yamanaka. Effect of Linearly Increasing and Decreasing Current on the Optic Nerve Discharge of Lateral Eye of Horseshoe Crab	161
GEORGE G. BERG AND BARBARA SCHUPACK. Adaptive Changes in Trimetaphosphatase of Mouse Intestine	165
R. L. Airth and G. E. Foerster. Some Aspects of Fungal Bioluminescence	173
SUPPLEMENT 1 NOVEMBER 1960	
ALEXANDER HOLLAENDER — Introduction	ix
C. R. Austin. Anomalies of fertilization leading to triploidy.  Two figures	1
A. W. H. Braden. Genetic influences on the morphology and function of the gametes. Three figures	17
Beatrice Mintz. Embryological phases of mammalian gametogenesis. Fourteen figures	31
Hans Grüneberg. Developmental genetics in the mouse, $1960$	49
W. F. Hollander. Genetics in relation to reproductive physiology in mammals. Two figures	61
RAY D. OWEN. Current status of mammalian immunogenetics	73
SALOME GLUECKSOHN-WAELSCH. The inheritance of hemoglobin types and other biochemical traits in mammals. Two figures	89
HERMAN B. CHASE AND STANLEY J. MANN. Phenogenetic aspects of some hair and pigment mutants	103

#### CONTENTS

1-0	.13
LIANE BRAUCH RUSSELL AND W. L. RUSSELL. Genetic analysis of induced deletions and of spontaneous nondisjunction in-	.23
induced deletions and of spontaneous nondisjunction in-	53
volving chromosome 2 of the mouse. Two figures To	60
	.00
INDEX	189

